United States Coast Guard
U.S. Department of Homeland Security

U.S. Coast Guard History Program

40-Foot Utility Boat

Number:	**2**	40369-40370	Prototype Wood Single Screw	1950
	1	40371	Prototype Wood Twin Screw	1951
	17	40372-40373 & 40376-40390	Mark I, Model 1 Wood Twin Screw	1951
	1	40375	Prototype Steel Twin Screw	1951
	131	40391-40491 & 40493-40501 & 40505-40518	Mark I Steel Twin Screw	1951-1952
	1	40492	Mark II Plywood Twin Screw	1951
	3	40502-40504	Mark III Plastic Twin Screw	1952-1953
	26	40519-40547	Mark IV Steel Twin Screw	1953-1954
	40	40548-40589	Mark IV Mod 1 Steel Twin Screw	1955-1959
	1	40043	Mark V Prototype Plastic Single Screw	1959
	7	40590-40596	Mark V Mod 1 Plastic Single Screw	1961
	13	40597-40609	Mark VI Plastic Twin Screw	1962-1966

Total Built: 236

Completed: 8 September 1950 through 16 May 1966

Remarks: Most units were built by the Coast Guard Yard at Curtis Bay, MD with the exception of the Mark III Plastic and the Mark V Plastic boats. All 40' UTBs were decommissioned by 1983. CG 40583 was last boat in service.

Cost: $47,675 (Mark I 1951) $62,189 (Mark IV 1959)

Hull:

- **Displacement (lbs):** 21,500(1951); 23,765 (1953)
- **Length:** 40' overall
- **Beam** 11' 2"
- **Draft:** 3' 2" max (1951)

Machinery:

- **Main Engines:** 2 GMC 6-71 diesels (190 HP)
- **BHP:** 380
- **Propellers:** 2 20"D x18"P x 1-3/4" bore LH & RH

Performance:

- **Max Speed:** 22 knots (Mark I Steel) (1951)
- **Cruising Speed** 15 knots, 190-mile radius (1951)
  18 knots, 450-mile radius (1953)

Logistics:

Fuel Oil (95%):	228 gallons (1951); 370 gallons (1953)
Complement:	3

Electronics:

Radar:	Some boats equipped with Radar and Radio
Radio Direction Finders	Direction Finders

Design

By the end of the 1940s, the original 38' cabin picket boats and 30' motor rescue boats were rapidly wearing out and had become obsolete given the significant increase in missions for the Coast Guard, including general marine law enforcement, recreational boating safety, environmental protection, and port security. Newer and faster designs were needed with better towing capabilities in order to respond to these operational requirements.

The first new design to be developed by the Coast Guard in 1949 for this purpose was the 40' utility boat (UTB). This design was first tested by means of an extensive modification of a 38' cabin picket boat, rebuilding it to simulate the layout of the proposed 40' design. The first of these boats CG 40369 was completed in 1950. It was powered by a single GMC 6-110 Diesel 275 HP engine. Sea trials resulted in very favorable reviews and the new boat was put in service at Sandy Hook NJ Lifeboat Station. A second boat in this configuration was built but these boats were only capable of achieving a speed of 18.5 knots when 20 knots was the design criteria. Following these trials, the Coast Guard Engineering Staff decided to switch to a twin screw configuration and install 2 GMC 6-71 engines of 190 HP each. In February 1951 the wood hull CG 40371 and steel hull CG40375 utility boats were put into service. They were turned over to The Coast Guard Field Testing and Development Unit for evaluation. The trials revealed that the steel hulled boat should be modified because the wood hulled boat provided superior comfort and resistance to pounding in heavy seas as well as drier deck surfaces. It also had better visibility for the Coxswain. The steel boat was capable of 22.5 knots and the wooden boat a little over 20 knots. With the trials completed both boats were delivered to operating units.

At this point all Engineering efforts were directed to designing a steel boat with sea qualities approaching those of the wooden boat. This was accomplished by pinching in and adding a little greater flare to the bow. These simple modifications achieved a boat with better sea-riding qualities as well as an improved underwater fineness. This concluded the 40-foot Mark I design program.

Mark I Utility Boat Production
The Coast Guard Yard had a requirement to build 125 boats to replace those in service and to meet new requirements. The Yard had never built boats in large quantities or to a tight schedule. Therefore they set up a production line with prefabricated sub-assemblies. This assembly line technique commenced operation in June 1951. The planned rate of delivery was one boat per day and this was reached in July 1951 and continued for the construction of over 100 boats. During this time 15 Model 1 wooden boats were built as well and additional steel boats for the US Navy and the Military Assistance Program. In 1951, the Coast Guard Yard built 27 Mark I Model 2 boats for the French Navy for service in Viet Nam. No interior control station was installed, a 50 Cal. Machine gun mount on bow and a 20 mm Cannon on the stern in place of tow bit. In 1955, the remainders of these boats were transferred to start the South Viet Nam Navy.

Mark II Utility Boat.
The Coast Guard Yard built one twin screw 40-foot Utility boat with a marine plywood hull in November 1951. The mechanical components of the Mark I boats were installed: Twin GMC 6-71 Diesel engines and 20" x 18" propellers. She had a cruise speed of 18.5 knots and a 192 mile range. She was attached to the Yard's Testing and Development Division of the Office of Engineering for evaluation.

Mark III Utility Boat
In 1952 and 1953, the Coast Guard contracted with Anchorage Plastics Corp. of Warren, RI to build 3 single screw plastic 40-foot Utility boats. The mechanical components of the Mark I boats were installed: Twin

GMC 6-71 Diesel engines and 20" x 18" propellers. She had a cruise speed of 20 knots and a 192 mile range. One of these boats was attached to the Yard's Testing and Development Division of the Office of Engineering for evaluation.

40-foot Utility Boat Competition
In May 1952 a comparative operational test was conducted by the Coast Guard Yard's Testing and Development Unit utilizing one Mark I Steel UTB, one Mark II Plywood UTB, and one Mark III Plastic UTB. These boats were comparison tested during the period of 9 June through 4 July between Norfolk, VA and Cape May, NJ. These tests concluded that although there were certain areas where each boat excelled, the steel boat's superior ruggedness made it capable of withstanding the greatest amount of abuse.

Mark IV Utility Boat
In 1954, the Utility boats had been in service for 18 months. The Office of Search and Rescue had recommended certain configuration changes. The Coast Guard Naval Engineering section drafted plans for a Mark IV version of the 40-foot UTB. The changes incorporated in the Mar IV version were:

- Engines and Pilothouse were moved 2 feet aft.
- Refinement to the propeller shaft struts, rudders, and aft parts of the hull bottom.
- Enlarged fuel tanks increasing capacity from 228 gallons to 370 gallons. (Subsequent trials indicated that this increased the boats speed by 4 knots and range by 175 miles.)
- Canvas Canopy installed over the outside steering station.

Mark IV Mod 1 Utility Boat
In 1955, the Mark IV Mod 1 was developed. The modification included:

- Redesign Cabin Windows
- Remove Engine Box Louvers
- Lighted Instrument Panels
- Use of Plexiglas discontinued
- Coxswain's platform on outside station raised
- Pilothouse door hinged to swing outward.

The steel 40-foot utility boat building program was completed in 1959.

Mark V Utility Boat
In 1959, the Coast Guard contracted with W.R. Chance and Associates of Waldorf, MD to build one plastic and fiberglass single screw utility boat of Coast Guard design. The boat was designed for Captain of the Port (COTP) surveillance and inshore rescue duties. This boat was attached to the Yard's Testing and Development Division of the Office of Engineering for evaluation. Following sea trials, she was assigned to an operating unit.

Mark V Mod 1 Utility Boat
In 1961, the Coast Guard contracted with Universal Molded Fiberglass to build seven Mark V Mod 1 single screw plastic and fiberglass boats. She was powered by a GMC 6-71 Model 612IT 300 HP @ 2300 RPM with a V-drive. The single screw boat proved not to be as efficient as the twin screw boats. The single engine V-drive proved not to be reliable.

Mark VI Utility Boat
In 1962, the unreliability of the Mark V, Mod 1 led to the development of the Mark VI plastic boat. The Mark VI was designed with twin Cummins V-6 Turbo-charged diesel engines producing 260 HP @3000 RPM to increase speed and durability. She had a speed of 25 knots and a range of 200 miles. The Coast Guard Yard constructed 13 Mark VI boats between 1962 and 1966. The UTB building program ended in 1966.

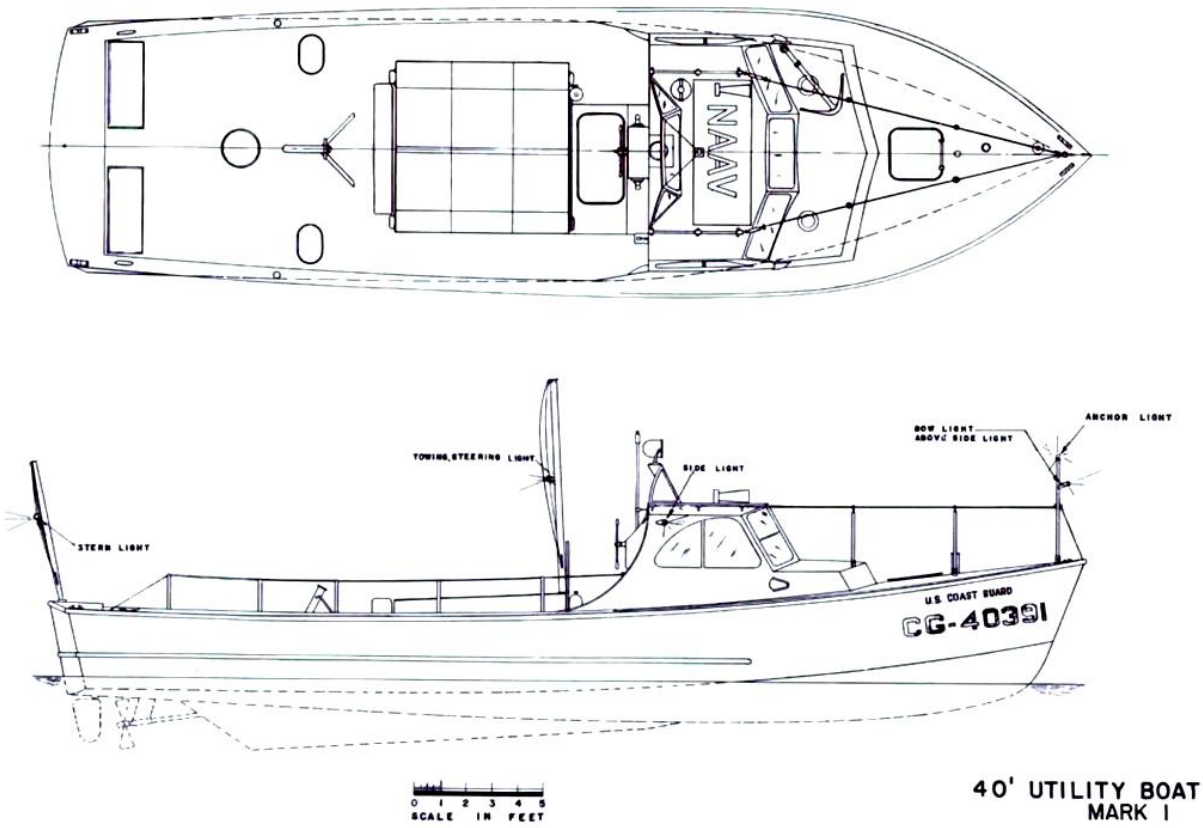
Images

38-foot Picket Boat Modified to 40-foot UTB Layout

CG 40369 Prototype Single Screw Wood Boat

CG 40376 Mark I Model 1 Twin Screw Wood Boat

CG 40380 Mark I Model 1 Twin Screw Wood Boat

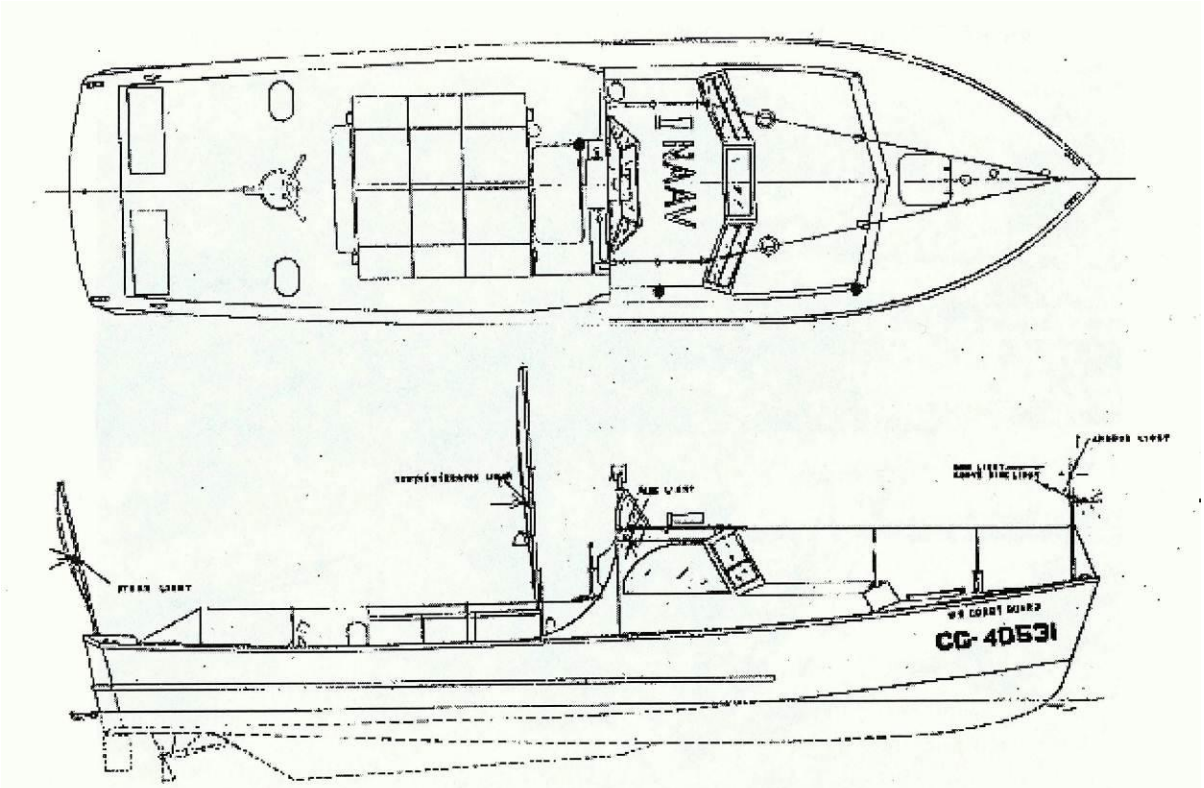


CG 40391 Mark I Twin Screw Steel Boat

CG- 40408 with a 30 Caliber Machine Gun on Bow

CG 40492 Mark II Twin Screw Plywood Boat

CG 40504 Mark III Twin Screw Plastic Boat



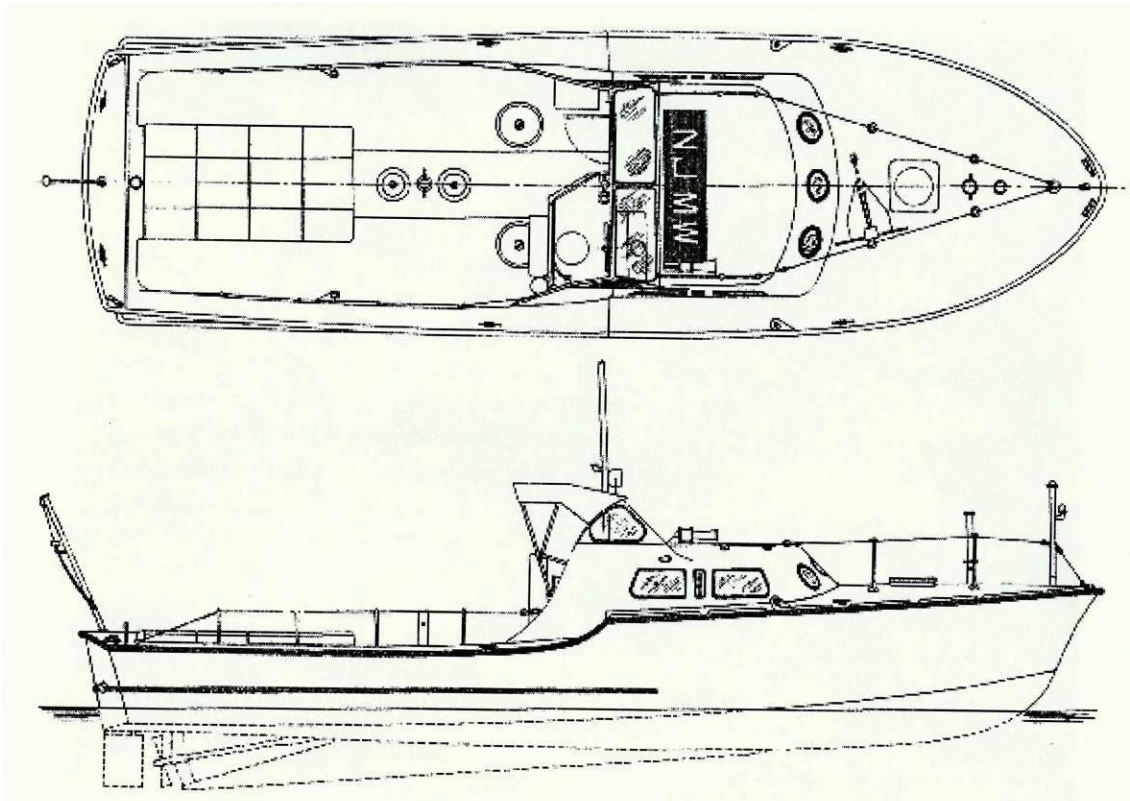
40 – FOOT UTILITY BOAT MARK IV

CG 40525 Mark IV Twin Screw Steel Boat

Artist's Rendition of a Mark IV Twin Screw Steel Boat

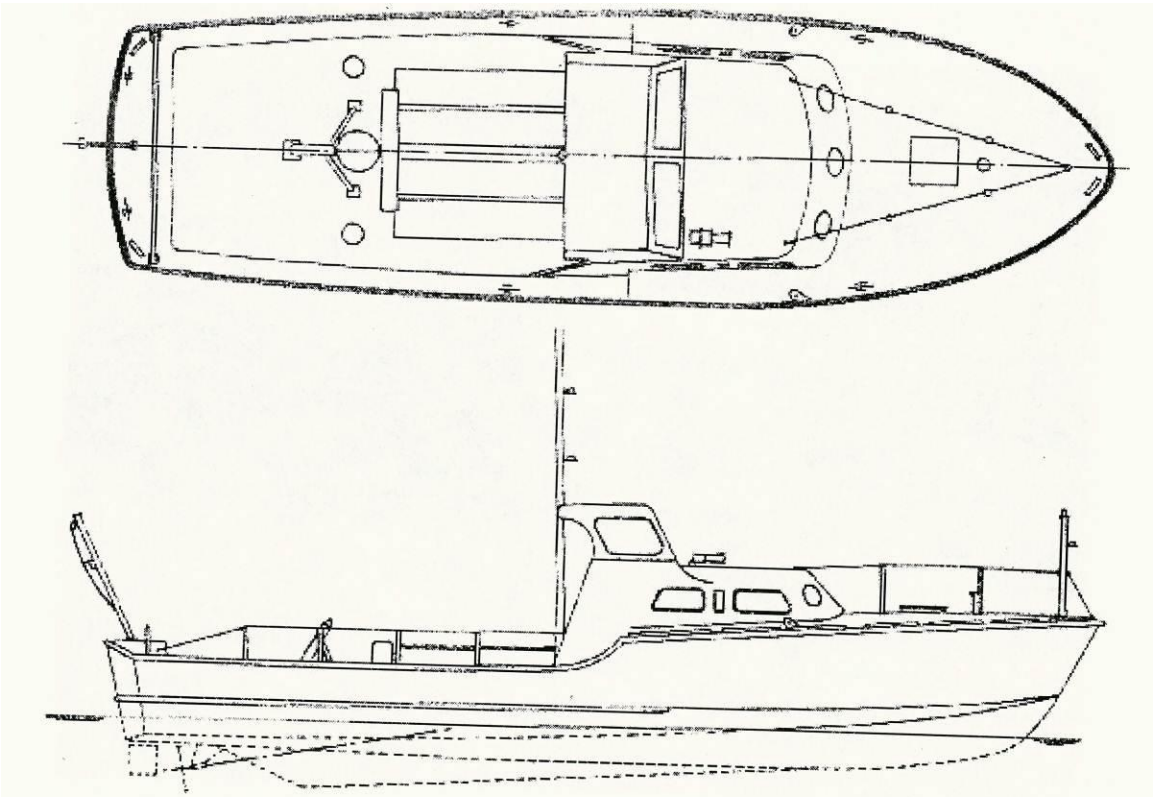
CG 40548 Mark IV Mod 1 Twin Screw Steel Boat

CG 40043 Mark V Prototype Plastic Single Screw Boat



40’ UTILITY BOAT PLASTIC – MARK V MODEL I

CG 40595 Mark V Mod 1 Plastic Single Screw Boat



40’ UTILITY BOAT PLASTIC MARK VI

CG 40604 Mark VI Plastic Twin Screw Boat

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